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EXAMINER	
DRYDEN, MATTHEW DUTTON	
ART UNIT	**PAPER NUMBER**
3736	

DATE MAILED: 05/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

C

Office Action Summary	**Application No.** 10/681,529	**Applicant(s)** STEWART, ROBERT E.
	Examiner Matthew D. Dryden	**Art Unit** 3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Examiner acknowledges the amendments to the claims in the first action submitted on March 19, 2006.

Specification

Examiner acknowledges the change to the title of the invention.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Curchod (5826578).

Regarding claim 1, Curchod discloses an apparatus comprising:

one or more sensors that produce one or more signals based on one or more joint motions of an individual (elements 22 in Figure 4),

one or more processing components that employ one or more of the one or more signals to make a determination of a positional change of the individual (element 30 in Figure 2),

wherein the one or more joint motions are measured and reconstructed to determine a path traversed by the individual (the signals produced by the sensors of Curchod are used to measure and reconstruct the path of the joints while the user performs a golf swing or other various movements and once obtained the path is compared to an ideal path of motion, see entire document).

Regarding 18, Curchod discloses a method comprising:

measuring one or more movements of one or more joints of an individual (see Column 4, lines 15-17),

translating the one or more movements into a positional change of the individual (see Column 4, lines 39-59) the movements of Curchod are translated to the display to show a positional change of the individual,

and reconstructing the one or more movements to determine a path traversed by the individual (see Column 4, lines 39-59, also see entire document), the path traversed by the individual is the swing of the person that is monitored.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 2, 3, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curchod in view of Stark et al. Curchod discloses the claimed invention except for the device comprising one or more strain sensors. Curchod does disclose that his device can be provided with numerous other types of sensors well known in the art (see Column 4, lines 10-15). Stark et al teach it is known to provide position sensing apparatus with strain sensors to provide an output which is indicative of a quantitative stress level (see Column 17, lines 18-23). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Curchod with a strain sensor, as taught by Stark et al, to provide an output which is indicative of a quantitative stress level.

Regarding claim 3, the sensors of Stark et al are located adjacent the knee joint as can be seen in Figure 11, also Curchod teaches it is known to provide a sensor adjacent to many joints of the individual,

the sensors experience a strain in response to the knee joint motion and represent the strain as strain information in a signal and the apparatus translates the strain information into the positional change of the individual, see Column 22-23, lines 29-10.

Regarding claims 19 and 20, see Stark et al, Column 22 lines 29-47. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Curchod with steps as set forth by claims 19 and 20 of the current application, as taught by Stark et al, to provide an output which is indicative of a quantitative stress level, and to provide positional information based on the detected strains.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curchod in view of Stark et al, as applied to claim 2 above, and further in view of Danisch. Curchod as modified discloses the claimed invention except for the apparatus comprising: a strain sensor that detects a bending of a joint and the sensor representing the bending as strain information, the strain sensor detecting a twisting of a joint of the individual, and an apparatus comprising both a bending sensor and a twisting sensor used to determine the displacement of the individual. Danisch discloses a topological and motion measuring tool that comprises both bending sensors and twisting sensors that are strain sensors that provide signals to determine the position and displacement of the person or object wearing the sensors (See Columns 10-11, lines 54-15). The purpose of providing the bending and twisting sensors in the same apparatus is to allow the user to monitor the wearer of the apparatus, and increases the validity of the location and path taken by the wearer, which in turn allows for more efficient and accurate analysis. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the device of Curchod with bending and twisting strain sensors, as taught by Danisch, to allow the user to monitor the wearer of the apparatus, and increases the validity of the location and path taken by the wearer, which in turn allows for more efficient and accurate analysis.

Claims 7-10, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curchod in view of Soehren et al (6522266). Curchod discloses the claimed invention except for the apparatus comprising: a filter component that weighs and combines a positional change determined by the processing components and position information from one or more supplementary navigation components, the supplementary navigation components comprising GPS or INS, the processing components receiving position correction information from the supplementary navigation components, an initial position location supplied to a supplementary navigation component, a magnetic heading sensor, and the system calculating an updated position of the individual. Soehren et al discloses a navigation system that uses a Kalman filter that receives a first position and a change in position, detected by motion sensors, and are weighed and combined accordingly (see Columns 3-4, lines 39-65, specifically Column 4, lines 31-65). The motivation for providing a filter that weighs and combines the positional change and position information is to provide the user of the system a way to monitor their progress and efficiency, and provides a filter to help estimate the geolocation of the user if one aspect of the apparatus were to stop functioning. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Curchod with a filter component that weighs and combines a positional change determined by the processing components and position information from one or more supplementary navigation components, as taught by Soehren et al, to provide the user of the system a way to monitor their progress and efficiency, and provides a filter to help estimate the geolocation of the user if one aspect of the apparatus were to stop functioning.

Regarding claim 8, Soehren et al also teaches to provide a supplementary navigation component that comprises GPS, and the filter component weighs and combines position information from the processing components and the supplementary navigation components based on a relative reliability, (see Columns 5 and 6, lines 33-7, regarding reliability see Column 3, lines 39-54). The motivation for providing a supplementary navigation component and having the filter weigh and combine position information from the processing components and the supplementary navigation components is to provide the system with a more efficient locator and position monitor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Curchod, with a filter component that weighs and combines position information from the processing components and the supplementary navigation components based on a relative reliability, as taught by Soehren et al, to provide the system with a more efficient locator and position monitor.

Regarding claim 9, Soehren et al teaches it is known to detect position correction information from the one or more supplementary navigation components (see Column 5, lines 54-59) to provide the system with a corrected location to be analyzed based on the initial location and path of the wearer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Curchod with a processing component that receives position correction information from the supplementary navigation component, as taught by Soehren et al, to provide the system with a corrected location to be analyzed based on the initial location and path of the wearer.

Regarding claim 10, Soehren et al teaches that it is known to provide a motion monitoring system with a supplementary navigation component (INS or GPS) that receives initial position information of the individual (See Column 5, lines 20-33), to provide the system with a starting point so the distance traveled and the rate of the individual can be tracked using the apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Curchod with a supplementary navigation component (INS or GPS) that receives initial position information of the individual, as taught by Soehren et al, to provide the system with a starting point so the distance traveled and the rate of the individual can be tracked using the apparatus.

Regarding claim 12, Soehren et al teaches that it is known to provide a motion monitoring system with a magnetic sensor for direction heading (Column 5, lines 20-32), to provide directional information that can be used by the Kalman filter to determine positional changes and the location of the wearer. It would have been obvious at the time the invention was made to modify the device of Curchod with a magnetic sensor for direction heading, as taught by Soehren et al, to provide directional information that can be used by the Kalman filter to determine positional changes and the location of the wearer.

Regarding claim 15, Soehren et al teaches that it is known to provide a motion monitoring system with a calculated and updated position of the individual based on a starting point and the positional change of the individual and is sent to a display component (see Columns 5-6, lines 60-7) to provide the user and wearer with a record of the distance and path traveled and to allow for further analysis once the final position is detected. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Curchod with a calculated and updated position of the individual based on a starting point and the positional change of the individual and is sent to a display component, as taught by Soehren et al, to provide the user and wearer with a record of the distance and path traveled and to allow for further analysis once the final position is detected.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Curchod in view of Jayaraman et al (6381482). Curchod discloses the claimed invention except for the one or more sensors being integrated into a suit wearable by the individual.

Jayaraman et al teaches a fabric or garment that has sensors integrated inside the fabric to monitor a specific medical condition of the wearer (see abstract). The purpose of providing a suit or other garment is to provide the user with a comfortable outfit that tracks both movement and location without having to strap any bulky equipment to their body. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Curchod with a suit having integrated sensors, as taught by Jayaraman et al, to provide the user with a comfortable outfit that tracks both movement and location without having to strap any bulky equipment to their body.

Claims 13, 14, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curchod in view of Root et al (6013007). Curchod discloses the claimed invention except for: the apparatus comprising a barometric altitude sensor, the device being calibrated by or for the user, and one of the sensing components comprising a rate sensor. Root et al discloses a monitoring system that includes: calibrating the apparatus (see Column 6, lines 63-66), regarding the rate sensor the GPS system has a sensor capable of determining the speed of the user which can be viewed as a rate sensor (see Column 7, approx. lines 30-40), barometric pressure sensor (See Column 4, lines 50-54). The purpose of including all of these components is to increase the accuracy of the system in determining the location of the wearer, which helps in analysis of the motions of the wearer's joints and body. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Curchod with a calibration done by the wearer, a rate sensor, and a barometric sensor, as taught by

Root et al, to increase the accuracy of the system in determining the location of the wearer, which helps in analysis of the motions of the wearer's joints and body.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Curchod in view of Jamel et al (6788200). Curchod discloses the claimed invention except for the supplementary navigation components being integrated into the shoe of the wear and initiating one or more zero velocity updates. Jamel et al teaches a pair of shoes that have a global positioning system in them and that is capable of initiating zero velocity updates, for whenever the user stops moving (see Columns 9-10, lines 54-5), to allow for a better measurement of velocity over the distance traveled and so that the wearer's step width can be determined. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the device of Curchod with a shoe that includes GPS that initiates a zero velocity updates, as taught by Jamel et al, to allow for a better measurement of velocity over the distance traveled and so that the wearer's step width can be determined.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Curchod in view of Stark et al, applied to claim 18 above, and further in view of Soehren et al. Curchod as modified discloses the claimed method steps except for adding the positional change of the individual to a known starting location to determine an updated position. Soehren et al discloses a motion monitoring system that teaches it is known to provide a start position with positional change information, to determine an updated location of the wearer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the method of Curchod with a step of providing positional change information to the starting location, as taught by Soehren et al, to determine an updated location of the wearer.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jayaraman et al in view of Curchod. Jayaraman et al teaches the disclosed invention except for the invention measuring one or more movements of a joint in the individual and translating the movement into a positional change. Jayaraman discloses an article (see Figure 11) that transmits signals that are received by receivers coupled to data buses, and the garment is also provided with a receiver portion on the garment (See Column 15 lines 30-67), which also comprises a chip that can be viewed as a computer readable medium. As defined by the applicant in the specification the computer readable medium comprises a modulated carrier signal transmitted over a network, which the invention of Jayaraman et al does through the chips in the garment. Curchod discloses a motion measurement system for position sensing that monitors a plurality of joints and determines the position of each joint based upon the sensors of the system. The purpose of providing a computer readable medium and position determination component on an article of clothing is so that the movement of the wearer can be interpreted and monitored along with the location of the user or wearer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Jayaraman et al with a position and joint monitoring system, as taught by Curchod, so that the movement of the wearer can be interpreted and monitored along with the location of the user or wearer.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Dryden whose telephone number is (571) 272-6266. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MDD

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